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SARS-CoV-2: Future Potential Impact on Timing of Menarche and Onset of the Regular Menstrual Cycle in Adolescents



Letter to editor

To date, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a global health crisis (Cash & Patel, 2020). This disaster affects the economy, daily living habits, disrupts the celebrations, leads to postponement of sports, impose psychiatric conditions, and thereby change the risk of chronic disease in future (Di Renzo et al., 2020; Haleem, Javaid, & Vaishya, 2020; Mattioli, Sciomer, Cocchi, Maffei, & Gallina, 2020; Pfefferbaum & North, 2020).

Menarche timing and onset of ovulatory menstrual cycles are life stones of reproductive life span and the future women's health. A combination of several genetic and environmental factors involved in determination of menarche timing and development of ovulatory menstrual cycles (Carlson & Shaw, 2019; Mishra, Cooper, Tom, & Kuh, 2009). Based on the evidence menarche timing (early/late) is linked to pregnancy time and considered as a potential risk for adverse health outcomes in later life (Day, Elks, Murray, Ong, & Perry, 2015; Gulbrandsen et al., 2014).

Stressful life events and nutritional status play an important role in determining menarche age (Graber, Brooks-Gunn, & Warren, 1995; Soliman, De Sanctis, & Elalaily, 2014). Moreover, energy metabolism imbalance secondary to stress may contribute to ovulatory problems (Fontana & Torre, 2016). Occurrence of SARS-CoV-2 pandemic acts as a major stressors especially among children and adolescents who may present more psychological symptoms (Guessoum et al., 2020; Loades et al., 2020). Moreover, obesity epidemic exacerbated by SARS-CoV-2 pandemic (Clemmensen, Petersen, & Sørensen, 2020), as a result prepubertal obesity in adolescents may resulting prepubertal hyperandrogenism which may lead to early onset of puberty (Burt Solorzano & McCartney, 2010).

Feeling grief because of fear of loss family, parent's loss income, loss of routine social relationships, food insecurity, rising obesity epidemic as a result of sedentary behaviors may affect the menstrual cycle developmental trajectory. Likewise, SARS-CoV-2 by affecting the non-genetic determinants of menarche age and menstrual cycle developmental trajectory at population level, is a risk marker for a wide range of adverse health consequences in later life of women.

It is recommended that health care providers and parents should be sensitive to the children and adolescents lifestyle and mental health and

take steps to support and advocate for modification of behavior and life-style in children and adolescents to control the modifiable determinant factor of menstrual cycle developmental trajectory.

Declaration of Competing Interest

The authors declare no conflict of interest.

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